

Remarks

In view of the above amendments and the following remarks, reconsideration of the objections and rejections, and further examination are requested.

The specification has been reviewed and revised to make a number of editorial revisions thereto. A substitute specification has been prepared and is submitted herewith. No new matter has been added by the revisions to the specification. Enclosed is a marked-up copy of the specification indicating the changes incorporated therein.

A replacement Figure 30 is enclosed herewith. The replacement figure properly includes the label "6" for the terminal 6, which was inadvertently omitted in the original figure. No new matter has been added by this amendment.

Claims 13 and 20 have been objected to as containing informalities. Specifically, the objection indicates that claim 13 includes the term "ar a" which should be "area", and claim 20 includes the term "ctrically" which should be "electrically." It is noted that in the Applicant's copy of claims 13 and 20, the terms "area" and "electrically" are properly included therein. Therefore, it is unclear how the Examiner's version of the claims includes these typographical errors. In any event, claims 13 and 20 reproduced above have the correct terms. As a result, withdrawal of the objection to the claims is respectfully requested.

Claims 1, 4-14, 17, 18 and 23 have been rejected under 35 U.S.C. §102(a) as being anticipated by Sumio (JP 2002-319810). Claims 1-3, 6 and 17 have been rejected under 35 U.S.C. §102(a) as being anticipated by Okabe (EP 1239533). Claims 15, 16 and 19 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Sumio in view of Yoshinamoto (US 6,486,853). Claims 20-22 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Sumio in view of Suesada (EP 0831546).

Claim 1 has been amended so as to include the limitations of claims 2, 3 and 7. Claim 23 has been amended so as to include the limitations of claims 4, 7 and 8.

Claims 2-5 and 7 and withdrawn claims 24-32 have been canceled without prejudice or disclaimer to the subject matter contained therein. Claims 8 and 20 have been amended to as to change their dependencies from claim 7 to claim 1.

Further, claims 8, 21 and 22 have been amended to make a number of editorial revisions thereto. These revisions have been made to place the claims in better U.S. form. None of these amendments have been made to narrow the scope of protection of the claims, nor to address

issues related to patentability and therefore, these amendments should not be construed as limiting the scope of equivalents of the claimed features offered by the Doctrine of Equivalents.

In addition, new claims 33-35 have been added.

In light of the amendments to claims 1 and 23, the above-mentioned rejections are submitted to be inapplicable to the claims for the following reasons.

Claim 1 is patentable over Sumio and Okabe, since claim 1 recites a chip antenna including a substrate having a pair of end portions; a plurality of helical conductors provided on the substrate; and a pair of terminals respectively provided on the pair of end portions of the substrate, wherein one of said plurality of helical conductors is electrically connected to one of the pair of terminals, and another of the plurality of helical conductors is electrically connected to another of the pair of terminals, wherein the plurality of helical conductors are not electrically conductive with respect to each other, wherein the plurality of helical conductors are capacitively coupled, and wherein the one of the pair of terminals is connected to a power feeding section for feeding a signal current to the one of the pair of terminals and the another of the pair of terminals is open ended. Sumio and Okabe both fail to disclose or suggest the chip antenna as recited in claim 1.

Sumio discloses a chip antenna having a base 1. The chip antenna also has a plurality of terminal electrodes 5-7, an antenna section and an inductor section located on the base 1. The terminal electrodes 5 and 6 are located on opposite ends of the base 1 and the terminal electrode 7 is located between the terminal electrodes 5 and 6. Further, the antenna section and the inductor section are electrically connected to each other. (See abstract and Figure 1).

As mentioned above, the chip antenna of claim 1 recites that the plurality of helical conductors are not electrically conductive with respect to each other. However, Sumio clearly discloses that the antenna section and the inductor section are electrically connected. (See abstract). Therefore, it is apparent that Sumio fails to disclose or suggest this feature of claim 1.

Okabe discloses an antenna element 1 having a radiation electrode 20 located on a top surface 11 of the element 1. The radiation electrode 20 is divided into first and second halves 30 and 40 that are symmetrical about a center line 12. The first and second electrode halves 30 and 40 have open ends 32 and 42, respectively, on the top surface 11 of the element 1 at positions that are far away from the center line 12, and connection terminals 31 and 41, respectively, on the top surface 11 of the element 1 at positions that are close to the center line 12. The

connection terminal 31 of the first electrode half 30 is connected to a high frequency signal source 70 by way of a terminal 51. The connection terminal 41 of the second electrode half 40 is connected to ground 75 by way of a terminal 61. The total impedance of the first electrode half 30 and the second electrode half 40 is disclosed as being matched such that the resonance between the first and second electrode halves 30 and 40 can be enhanced. (See abstract and Figure 1A).

As also mentioned above, claim 1 recites that the pair of terminals are respectively provided on the pair of end portions of the substrate, wherein one of the plurality of helical conductors is electrically connected to one of the pair of terminals, and another of the plurality of helical conductors is electrically connected to another of the pair of terminals. However, as can be clearly seen from Figure 1A of Okabe, the terminals 51 and 61, which connect the first electrode half 30 to the high frequency signal source 70 and the second electrode half 40 to ground 75, respectively, are both located on the front surface 13 of the substrate 10 and are positioned close to each other on opposite sides of the center line 12. (See Figure 1A). From this description, it is apparent that Okabe fails to disclose or suggest the terminals as recited in claim 1.

In consideration of the above discussion, Sumio and Okabe do not disclose or suggest the present invention as recited in amended claim 1. Further, it is apparent that Sumio and Okabe can in no way be combined to render the invention recited claim 1 obvious.

Claim 23 is also patentable over Sumio and Okabe, since claim 23 recites a chip antenna including a substrate having a pair of end portions; a plurality of helical conductors provided on the substrate; and a pair of terminals respectively provided on the pair of end portions of the substrate, wherein one of the plurality of helical conductors is electrically connected to one of the pair of terminals, and another of the plurality of helical conductors is electrically connected to another of the pair of terminals, wherein the plurality of helical conductors are electrically connected with each other, wherein the one of the pair of terminals is connected to a power feeding section for feeding a signal current to the one of the pair of terminals and the another of the pair of terminals is open ended, and wherein the one of the plurality of helical conductors corresponds to a highest frequency of a plurality of transmitting and receiving frequencies and is connected to the one of the pair of terminals connected to the power feeding section. Sumio and Okabe both fail to disclose or suggest the chip antenna as recited in claim 23.

As discussed above, Sumio discloses the chip antenna having the plurality of terminal electrodes 5-7, the antenna section and the inductor section located on the base 1, the antenna section and the inductor section being electrically connected to each other. (See abstract and Figure 1). However, claim 23 recites that one of the plurality of helical conductors corresponds to a highest frequency of a plurality of transmitting and receiving frequencies and is connected to the one of the pair of terminals connected to the power feeding section. Sumio does not disclose or suggest this feature. Instead, Sumio only discloses that changing the winding number of an inductor results in obtaining a different resonant frequency. As a result, it is apparent that claim 23 is patentable over Sumio.

Okabe discloses the antenna element 1 having the radiation electrode 20 that is divided into the first and second electrode halves 30 and 40 symmetrical about the center line 12. (See abstract and Figure 1A). However, claim 23, like claim 1 discussed above, recites that the pair of terminals are respectively provided on the pair of end portions of the substrate, wherein one of the plurality of helical conductors is electrically connected to one of the pair of terminals, and another of the plurality of helical conductors is electrically connected to another of the pair of terminals, which feature is not disclosed or suggested by Okabe. As result, it is apparent that claim 23 is patentable over Okabe for the reasons set forth above in support of claim 1.

In consideration of the above discussion, Sumio and Okabe do not disclose or suggest the present invention as recited in amended claim 23. Further, it is apparent that Sumio and Okabe can in no way be combined to render the invention recited claim 23 as obvious.

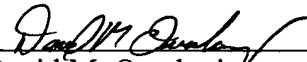
As for Yoshinomoto and Suesada, these references are relied upon as disclosing a protective film and a crown conductor, respectively. However, neither of these references discloses or suggests the above-discussed features of claims 1 and 23.

Because of the above-mentioned distinctions, it is believed clear that claims 1, 6, 8-23 and 33-35 are allowable over the references relied upon in the rejections. Furthermore, it is submitted that the distinctions are such that a person having ordinary skill in the art at the time of invention would not have been motivated to make any combination of the references of record in such a manner as to result in, or otherwise render obvious, the present invention as recited in claims 1, 6, 8-23 and 33-35. Therefore, it is submitted that claims 1, 6, 8-23 and 33-35 are clearly allowable over the prior art of record.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance. The Examiner is invited to contact the undersigned by telephone if it is felt that there are issues remaining which must be resolved before allowance of the application.

Respectfully submitted,

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